

# Understanding and Treating Uchcha Raktachapa (Hypertension) in perspective of Vidhishonitiya Adhyaya of Charaka Samhita - A Clinical Review

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**ABSTRACT :** Considering the high prevalence of the disease and the need to look for alternative medicine, Uchcha Raktachapa was screened in the light of Raktashrita Vyadhis mentioned in Vidhishonitiya Adhyaya of Charaka Samhita. Comparing the Hetu Skandha and Lakshana Skandha of Raktashrita Vyadhis with that of Uchcha Raktachapa (Hypertension), a striking similarity was revealed. To prove the practical approach of management revealed by the Aushadha Skandha of Raktashrita Vikara at Vidhishonitiya Adhyaya, a randomized open clinical trial on 30 uncomplicated subjects of Uchcha Raktachapa was allocated in 3 groups viz (A) Raktamokshana Group having 7 cases received blood letting therapy by Vene-Section, (B) Virechana Group having 12 cases were administered Anulomana with Haritakyadi Yoga and (C) Combined Group: 11 cases received Virechana (Anulomana), Rakta Mokshana along with Upavasa (Psychological Upavasa in terms of Meditation and Somatic Upavasa in terms of reduction in dietary intake). The overall effect of the therapies showed that Rakta Moshana proves more valuable in showing excellent response (28.5%) and combined therapy in marked response (81.81%). Both these therapies did not show any mild or no response. But in Virechana group, mild and no responses were also reported in few patients. The principle of line of management of Raktashrita Vikara applied to Uchcha Raktachapa produced the above results and thus Uchcha Raktachapa is proved as Raktashrita Vyadhi on parlance of Hetu, Lakshana and Aushadha Skandha. The response was encouraging and left the scope for further studies.

**Key words :** Uchcha Raktachapa, Raktashrita Vyadhi, Hetu Skandha, Lakshana Skandha, Aushadha Skandha.

## INTRODUCTION

Uchcha Raktachapa or Hypertension is called silent killer, because it rarely causes symptoms before it damages the heart, kidneys or brain. According to WHO report of Prevention and Control for Cardio vascular diseases, 2001-2002, it is estimated that 600 million people are affected world wide with Hypertension. By the year 2025, approximately 1 in 3 adults aged over 20 years - 1.56 billion people worldwide, will have hypertension. (An analysis published in the January 15 issue of *The Lancet*, *Medscape Cardiology*, 2005; 9 ©2005 Medscape). Hypertension is an important public health challenge in both economically developing and developed countries. Significant numbers of individuals with hypertension are unaware of their condition and, among those with diagnosed hypertension, treatment is frequently inadequate. Measures are required at a population level to prevent the development of hypertension and to improve awareness, treatment and control of hypertension in the community<sup>1</sup>. Moreover, persistent Hypertension is

one of the risk factors for strokes, heart attacks, heart failure and arterial aneurysm, and is a leading cause for chronic renal failure. Even moderate elevation of arterial blood pressure leads to shortened life expectancy and causes 5 million premature deaths each year worldwide. (WHO World Health Report, 2002).

The disease named as Uchcha Raktachapa is neither denoted in Samhita nor in any Samgraha Granthas, but it is stated that every disease can not be given nomenclature every time<sup>2</sup>. The term 'hypertension' was nominated after the invention of Sphygmomanometer but before that about its existence, one can trace the pathway on the tract of symptomatology.

These efforts of tracing Hypertension gave rise to different opinions. Some of them are: Raktagata Vata, Dhamani Purnata, Siragata Vata, Dhamani Praticaya, Vyanabala Vriddhi, Avruta Vata, Ajirna - Udavarta etc. Acharya Priyavrat Sharma has mentioned it as 'Raktavata'.

In all the above opinions, different views have been adopted but no one has denied the fact that in Hypertension, the main pathogenesis occurs in Rakta Dhatu and blood vessels. It is psychosomatic and Tridoshatmaka disorder.

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### Uchcha Raktachapa in the light of Vidhishonitiya Adhyaya :

Everything which is in existence has its place in our ancient treatises. It is our duty to search new ways of application to prove the oath of our science<sup>3</sup>.

Regarding hypertension, though it is not directly mentioned in Samhita, the 'Vidhishonitiya' chapter helps one to visualize it and one can successfully categorize it as a Raktashrita Vyadhi on the Triskandha (Hetu, Lakshana and Aushadha) parlance.

### Understanding Uchcharaktachapa (Hypertension) in the perspective of Vidhishonitiya :

#### Similarity in Hetuskandha<sup>4</sup>:

If the comparison between the etiological factors of hypertension and Raktadushtikara hetus is conducted, the following similarities can be found.

**Alcohol :** Madya - Sura - Sauviraka such self generated alcoholic preparations are considered as the Hetus. Alcohol with its Tikshna guna may cause vitiation of Rakta.

**High Salt Intake :** The most attention gained factor is high salt intake. Atilavana and Kshara Sevana are the dominant causes proposed for Rakta Dushti. The excessive consumption of Lavana Rasa causes Rakta Dushti. It is supposed to be because of Vishyandana property of Lavana<sup>5</sup>, where the word 'Sravayati' may be pointing towards change in osmolarity, which could be a factor in pathogenesis of hypertension.

**Stress, Anxiety, worries :** These are aggravating factors of hypertension. So the higher prevalence of this disease is found in the persons with intellectual professions (Buddhi jivi). Krodha, Shrama and Santapa are clearly stated in hetus of Rakta Dushti.

**Nutrition :** It is said that vegetarians have lower blood pressure at all the ages than omnivorous. The meat of the aquatic and marshy land animals & Drava, Snigdha and Guru Ahara causes Rakta Dushti<sup>6</sup>. These Nidanans are Kaphakara and increase Kleda, which may increase Rasa Rakta Apyansha and may cause Srotosankocha. The nutritional causes which increase serum lipids, commonly seen in many cases of hypertension can be correlated with this type of diet.

**Obesity :** Hypertension is more common in obese persons. Atyadana, Deevasvapa, Adhyashana, Ajrnashana etc. are the mentioned causes of Rakta Dushti and are associated with obesity.

**The Age and Sex ratio :** The prevalence of Hypertension is more in menopausal women. Menopause

is the state of Artavakshaya which is age related physiological phenomenon. The Artava is related to Rasa and Rakta. So Rajonivritti may cause Rakta Dushti and this may correlate the higher incidence of Hypertension in menopausal women.

#### Similarity in Lakshana Skandha<sup>7,8</sup> :

The surprising similarity between the symptoms of Shonitashrita Vikara and Hypertension can be observed as follows :<sup>9</sup>

1. Shiroruka - Headache
2. Tamodarshana - Giddiness
3. Tandra - Drowsiness, Vertigo
4. Gurugatrata, Atidaurbalya, Klama - Fatigue Complex
5. Krodha Prachurata, Buddhi - Irritability and Sammoha, Mada, Santapa - Anxiety Complex
6. Agnisada, Tiktamlodgara, - Anorexia Complex Aruchi, Annapana vidaha
7. Akshiraga - Sub-conjunctival and Retinal haemorrhage
8. Pramilaka - Visual disturbances
9. Upakusha (Pyorrhoea), Raktameha, Pipasa, Sweda shows association with Diabetes mellitus.
10. Vatashonita may show its relation with vascular disorders.
11. Kampa may manifest as a complication.
12. Bhrama is not quoted in Raktashrita Vikara but seen in the patients of Hypertension. Bhrama is mainly due to the involvement of Raja and Pitta indirectly Rakta too.
13. Rakta Pitta is quoted as Raktashrita symptom. It can be correlated with Epistaxis, Cerebral bleeding which is a complication of Hypertension.
14. Mukhapaka, Gulma, Visarpa, Vidradhi, Pradara, Kandu, Kotha, Pidaka, Kushtha, Charmadala etc. do not show a definite relation with hypertension but could be found as associated symptoms in many of the patients of hypertension.

#### The placement of Mada, Murchchha And Sanyasa in Vidhishonitiya<sup>10</sup> :

The Mada Murchchha and Sanyasa are the 3 diseases mentioned in Vidhishonitiya. In these conditions Raktavaha Srotas is specifically mentioned as the seat of pathology along with Rasavaha and Sanjnavaha Srotas. The smooth and rapidly developing neurological deficit is also stated in the pathogenesis.

These three conditions are commonly found in the advanced stages of hypertension. Thus it can be said that the description of Mada Murchchha Sanyasa in Vidhishonitiya Adhyaya clearly indicates that the Uchcha Raktachapa can be visualized as Raktashrita Vikara.

♦ **Application of the Aushadha Skandha of Vidhishonitiya Adhyaya (Chikitsa Sutra of Raktashrita Vikara) to Hypertension<sup>11</sup> :**

The line of treatment includes Raktapittahari Kriya, Pachana therapy like Upavasa, Shodhana therapy like Virechana and Raktamokshana. These therapies should be used according to the stage of disease.

The mode of action of each Upakrama is explained shortly as under:

**Virechana (Anulomana) :**

By taking into the consideration of Vata Anubandha and Amajanita nature of Uchcha Rakta Chapa, Anulomana type of Virechana is selected here for the research study. An Anulomana drug does the digestion of Mala, breaks its compactness and excretes. It is the mild variety of purgation. So no specific rules have to be followed. The heavy purgative may cause Vataprakopa, which may worsen the condition.

As per the mechanism of action of Laxatives stated in Pharmacology, 'the laxatives are also likely to act through multiple mechanisms affecting the epithelial transfer directly or indirectly, leading to decreased sodium absorption and increase in chloride secretion by intestinal epithelial cells. This provides a hint that laxative action may help in reducing the sodium retention and thus controlling the blood pressure.

For Anulomana, Haritakyadi Yoga mentioned in Cha. Chi. 1/1/25, which is used for Samshodhana purpose before administering Rasayana was selected.

The ingredients and proportion of drugs used in this formulation are as under:

1. Haritaki ( <i>Terminalia chebula</i> )	-	2 gms
2. Vacha ( <i>Acorus calamus</i> Linn.)	-	1 gm
3. Saindhava ( <i>Rock Salt</i> )	-	½ gm
4. Amalaki ( <i>Emblica officinalis</i> )	-	2 gms
5. Pippali ( <i>Piper longum</i> Linn.)	-	1 gm
6. Vidanga ( <i>Embelia ribes</i> Burm.)	-	2 gms
7. Shunthi ( <i>Zingiber officinale</i> Rose.)	-	1 gm
8. Haridra ( <i>Curcuma longa</i> )	-	1 gm

The total composition of Haritakyadi Yoga shows the dominance of Katu Rasa, Madhura Vipaka, Ushna virya and Laghu Guna. The expected action of the drug is mainly Anulomana because no any drastic purgative is added in this Yoga.

**Upavasa :** The two aspects of Upavasa are psychological and somatic aspect.

*Psychological Aspect :* Upavasa is not just starvation but the main aim of it is to achieve mind control by avoiding expressions like anger. This aspect of Upavasa will help in maintaining the equilibrium of Manasa Doshas like Raja and Tama. It proves to be helpful in the disease like hypertension, which is of psychosomatic origin.

*Somatic aspect :* The word Upavasa more commonly seems to be used as a synonym of Langhana. This aspect of Upavasa (Langhana), if done appropriately will help in Dipana of Agni. It is also to be pointed out that due to Agni Dipana property, the Upavasa acts as Tridosahara and Uchcha Rakta chapa is a disease of Tridoshaja origin.

**Raktamokshana :**

Simple meaning is blood letting. The Rakta Mokshana is mainly conducted for removing the vitiated doshas from the blood. Since Hypertension is disorder having Sarvanga Gata Rakta Dushti, Siravyadha was selected in the present study.

**Treating Uchcha Raktachapa (Hypertension) in the perspective of Vidhishonitiya :**

**CLINICAL STUDY<sup>12</sup>**

This study serves the dual function of applying Chikitsa Sutra in order to prove its validity on Raktashrita Vikara and to prove Hypertension as Raktashrita Vyadhi by applying Aushadha Skandha and thus completes the comparison of Uchcha Raktachapa with Raktashrita Vyadhi on Triskandha parlance. Secondly, it is an attempt to find out the line of treatment and not merely to assess a drug effect for Uchcha Rakta Chapa. So, the present study was undertaken with following aims and objects:

**Aims and Objectives :**

1. To achieve the practical approach of the management for the Raktashrita Vyadhi mentioned at Vidhishonitiya Adhyaya.
2. To assess the effect of Upavasa, Virechana and Rakta Mokshana separately and combined on Uchcharaktachapa, following the principles of Raktaja Vyadhi.

3. To compile the data generated and to analyze it by proper statistical methods so as to draw conclusions objectively.

### MATERIAL AND METHODS

In total 30 uncomplicated cases of Essential hypertension were selected irrespective of their sex, religion, socio-economic status etc. from indoor and outdoor of Basic principles Department of I.P.G.T. & R.A. Hospital.

The detailed examination of the patients was done on the basis of specially prepared research proforma incorporating all the details of the vital data. The classical symptoms of Ama, Doshya Dushya examination were also carried out to state the Doshya Dushya involvement in the disease Uchcha Rakta Chapa.

Laboratory investigations of blood, stool, urine (Routine) and other such as S. cholesterol, Blood urea, Uric acid, SGOT, ECG were carried out. Patients having major findings directing towards grave pathologies were excluded.

#### Criteria for Selection of patients and Sampling :

- (1) The cases of Essential hypertension were selected. To nominate the hypertension, the definition of WHO, JNC IV is used.

It is the level of Systolic blood pressure of 140 mm of Hg or above or a level of Diastolic blood pressure of 90 mm Hg or above (*HT control WHO TRS 862*)

The patients were labelled with Uchcha Raktachapa only when the elevated blood pressure was observed at more than three consecutive readings with a gap of fifteen minutes each in supine position. Their average was utilized for diagnosis. All those readings were noted in between 10-11 AM.

- (2) The patients above 70 yrs age and those which are considered as Anaraha for the particular Upakrama were excluded.

#### Groups of Treatment :

The patients were randomly categorized into the following three groups:

**(A) Raktamokshana Group :** The 7 patients of essential hypertension of this group had been treated with Raktamokshana after every 10 days, maximum up to 6 times in 2 months. 10 - 20 ml. blood was let down by the method of vein section. The Sira of Vama/Dakshina Kurpuramadhy (Cubital fossa) was chosen.

The patients were advised to consume the Ghrutayukta Yavagu (Khichadi), a night prior to Raktamokshana. On the day of Raktamokshana, only light diet was given.

**(B) Virechana Group (Haritakyadi Yoga Group) :** The 12 patients of essential hypertension were registered in this group. In this group Virechana (Anulomana) Haritakyadi Yoga in the powder form in the dose of 10 gms each time was given after every 10 days for 3 consecutive days.

Drug : Haritakyadi Yoga  
Anupana : Jaggery water  
Time : Apana Kala (before dinner)

**(C) Combined Group :** In this group total 11 patients of essential hypertension were registered. In this group Raktamokshana, Virechana along with Upavasa was administered. Maximum three times Raktamokshana and three times Virechana was administered.

Patients were subjected to follow the following regimen as Upavasa.

- ♦ Meditation for 10 - 20 minutes in the morning.
- ♦ The dietary intake was reduced to 10% with respect to hunger.

#### Criteria for Assessment:

- (1) On the basis of persistent elevated blood pressure, by noting the alterations in the systolic and diastolic blood pressure before and after treatment.

TABLE NO. 1 : DIASTOLIC AND SYSTOLIC SCORE<sup>13</sup> :

Diastolic Score	Range mm of Hg	score	Systolic score	Range mm of Hg	score
Normotension	<90	0	Normotension	<140	0
Mild	90-99	1	Mild	140-159	1
Moderate	100-109	2	Moderate	160-179	2
Severe	110-119	3	Severe	180-209	3
Very Severe	>120	4	Very Severe	>210	4

**(2) On the basis of Gradation of symptomatology :**

- ♦ *Shirahshula* :
  - (i) Continuous throbbing pain covering complete head - 4
  - (ii) Continuous headache affecting partially - 3
  - (iii) Headache occurring more than twice a week - 2
  - (iv) Headache occurring once/twice a week - 1
  - (v) No Headache - 0
- ♦ *Bhrama* :
  - (i) Bhrama occurring daily - 3
  - (ii) Bhrama occurring more than twice a week - 2
  - (iii) Bhrama occurring once/twice a week - 1
  - (iv) No Bhrama - 0
- ♦ The Gradation of general Symptomatology was assessed by grouping the interrelated symptoms and by giving the score of 1 for the presence of symptom and 0 for absence of symptom.
- ♦ *The Raktadhatu Sarata* : As this study concentrates on the involvement of Rakta in the manifestation of Hypertension, the symptoms of Raktasarata were also taken into consideration before and after the treatment. Those symptoms were assessed by giving the score of 1 for the presence and 0 for their absence individually.
- (3) On the basis of effect of therapy on various biochemical measures.
- (4) The total effect of therapy was assessed by determining the percentage of score reduction.

Assessment	Score
Excellent Improvement	>75%
Marked Improvement	50-75%
Mild Improvement	25-50%
No Improvement	<25%

**Statistical Analysis :**

All the observations made on various parameters were subjected to statistical analysis in terms of Mean (x), S.D., S.E., paired 't' test was applied to assess the significances at  $p < 0.05$ ,  $p < 0.01$  and  $p < 0.001$ .

The obtained results were interpreted as Significant  $p < 0.05$ ,  $p < 0.01$ , Highly Significant  $p < 0.001$

**OBSERVATIONS**

Out of 30 patients of Uchcha Raktachapa, maximum were from the age group 41-50 & from 51-60 yrs., each occupying 30%. This reveals the fact that Uchcha Raktachapa is indeed age related process. It is Vata Pitta dominance period. Maximum patients were Hindu (86.6%). This may be due to the Hindu dominated population selected for the study. Sex wise female dominance (56.66%), if correlated with the age group dominance (40-60 yrs), is the menopausal state for the women and the Hypertension is more common in men than women up to age of 50 yrs and after which it is more common in women. Occupation of 60.6% patients was of moderate work whereas 23.35% were having sedentary type of work. It indicates the Santarpanjanita nature of disease.

Dietary habits reveal that 25.92% were having the habit of Adhyashana, which is a cause of Raktadushti. Adhyashana will also lead to Tridosha Prakopa and Uchcha Raktachapa is Tridoshaja Vikara. The 33.3% & 30% patients had Mandagni & Vishamagni respectively. The bowel habit shows 50% population suffering from irregular bowel habits. This indicates the role of Apana Vata in this disease. Uchcha Raktachapa is the psychosomatic disorder can be proved by the observations of Sleeping pattern, emotional makeup, Manasa Prakriti and Sattva. The sleeping habits shows that the majority suffered from disturbed sleep (43.33%) or sleep with nightmares (13.35%). This observation may be interrelated with the Emotional makeup revealing majority had Anxiety (60%), Depression (13.3%) and Anger (16.6%). The anxiety may be the cause of disturbed sleep. Rajasika Manasa Prakriti observed in majority of patients. The Avara Satva dominance provides the Adhishthana Vaigunya of Mana.

The Sara Pariksha, though revealed dominance of Madhyama Sara, no Pravara Sara patient was observed. This is the fact indicative of Dhatuvaigunya because Dhatu Upachaya is also dependent on Rakta<sup>14</sup>.

Regarding the past history of illness, maximum showed the frequency of Amlapitta. This disease is due to Agnimandya which continued its role in manifesting Uchcharaktachapa. Moreover, Pitta Vaigunya in Amlapitta vitiates Rakta due to Ashraya-Asrhayi relationship.

The frequency of Nidana Sevana assessed on basis of quantity and frequency of consumption revealed that among the Aharaja Hetus, Viruddhashana was reported in 60% patients followed by Lavana Rasa consumption in 56.6% patients. Amla Rasa Sevana was found in 53.3%.

Ushna Tikshna Ahara Sevana was prominently found in 46.6% and Paryushita Anna Sevana in 16.6%. Majority are quoted in the Hetuskandha of Raktaja Roga in Vidhishonitiya Adhyaya. Most of them are Santarpaka Hetus vitiating Kapha and Pitta.

In the Viharaja Nidana, Vegadharana indicates towards Vata Vaigunya. The Diwaswapa (53.3%) and Ratrijagaran (43.3%) indicate the improper sleep pattern leads to Vata Prakopa.

Vyasanatah, tobacco and alcohol were found as Hetus. The nicotine in tobacco has the atherosclerotic effect on blood vessels.

The observations for the frequency of the Raktaja Rogas (as mentioned in Vidhishonitiya Adhyaya) reveal that 100% had Shirahshula, 96.6% had Bhrama, and 76.6% had Annapana vidaha & Gurugatrata. Agnisada was noted in 70% and Atidaurbalya in 73.3%. Aruchi was found in 66.65%, Tiktamlodgara and Tamodarshana in 63.3% each. Pipasa was present in 56.6% and Mukhapaka and Vaivarnya, each was found in 46.66%. Santapa was noted in 43.3% whereas Klama was complaint of 40% patients. Tandra was reported in 36.6% and Krodha Prachurata and Swedadhikya were complained by 33.3% patients each. Akshiraga in 26.6%, Buddhimoha in 23.3%, Nidraadhikya and Kandu in 20% each were found. Kotha was noted in 10% and Kushtha and Upakusha were found in 6.6%, Vidradhi, Raktapitta and Mada was noted by 3.3% patients each. The observations showing the frequency of Raktaja Roga revealed that out of 41 symptoms quoted in Cha.Su.24 as Raktaja Roga, 27 symptoms were found predominantly in the patients of Hypertension. This indicates the disease as Raktashrita on the basis of Lakshana parlance. Moreover the symptoms such as Raktapitta, Mada, Upakusa etc., were found less, which indicates that they are complications and since

uncomplicated cases were selected, the frequency of those symptoms was observed less.

Among the Vata Vriddhi Lakshanas, Bhrama (96.6%), Balabhramsha (73.3%), Nidrabhramsha (60%) was found in majority of cases. Among Pitta Vriddhi Lakshanas, Trishna, Daha and Alpanidra each was found in 56.6% patients. Among Kapha Vriddhi Lakshanas, Gaurava (76.6%), Agnimandya (70%), Alasya (40%), Shwasa (40%) were predominantly reported.

The observations of Dosha Vriddhi reveal that the disease Hypertension is Tridoshaja Vyadhi.

Among the Rasadhatu Dushti Lakshanas, Agnisada was dominantly found in 70% patients. In the Rakta Dushti, Mukhapaka dominated the series with 46.6%. This reveals mainly the Rasadushti because the symptoms of it were found more. The Rasa and Rakta are two interrelated Dhatus. Ayurveda considers Rasa Rakta Samvahanam<sup>15</sup> and not merely Rakta Samvahanam and thus it is obvious that in the disease hypertension, where the default in the Rasarakta Samvahana is observed, Rasa ought to perform a role in pathogenesis.

Regarding Medo Dushti, 11 patients were Sthula, 5 had Madhumeha and 10 patients complained of Atisweda. The observations of Medo Dushti definitely point out the positive relation of Meda to Uchcharaktachapa. In practice also Madhumeha is commonly associated with Uchcha Raktachapa. Modern science explains it as due to insulin resistance.

Majja Dushti was prominently observed as Bhrama (96.6%) and Tamodarshana (63.3%). This may be a sign of involvement of brain in this disease. The Mamsa Dushti, Asthi Dushti and Shukra Dushti were not observed significantly.

## RESULTS

**TABLE NO. 2 : EFFECT OF THERAPIES ON SYSTOLIC BLOOD PRESSURE (in mm of Hg) :**

Group	Mean		% diff.	SD	SE	t	p
	BT	AT					
Virechana	159.3	147	7.74	15.44	4.45	2.466	<0.05
Rakta Mokshana	146.57	134.28	8.38	7.952	3.00	4.087	<0.01
Virechana, Rakta Mokshana & Upavasa	170.54	148.90	12.68	8.663	2.612	8.283	<0.001

**TABLE NO. 3 : EFFECT OF THERAPIES ON DIASTOLIC BLOOD PRESSURE (in mm of Hg) :**

Group	Mean		% diff.	SD	SE	t	p
	BT	AT					
Virechana	106.6	91.66	5.454	6.350	1.833	3.181	<0.01
Rakta Mokshana	98.00	87.71	10.49	6.156	2.327	4.420	<0.01
Virechana, Rakta Mokshana & Upavasa	98.60	90.90	7.918	4.124	1.249	6.258	<0.001

**TABLE NO. 4 : EFFECT OF THERAPIES ON SYMPTOM SHIRAHSHULA :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	3.08	1.00	67.56	1.311	0.378	5.503	<0.001
Rakta Mokshana	3.57	0.28	92.00	0.755	0.285	11.5	<0.001
Virechana, Rakta Mokshana & Upavasa	2.82	0.45	83.87	0.504	0.152	15.537	<0.001

**TABLE NO. 5 : EFFECT OF THERAPIES ON SYMPTOM BHRAMA :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	1.916	0.333	82.60	1.083	0.312	5.061	<0.001
Rakta Mokshana	1.714	0.287	83.33	0.786	0.297	4.803	<0.01
Virechana, Rakta Mokshana & Upavasa	2.272	0.272	88.0	0.894	0.269	7.416	<0.001

**TABLE NO. 6 : EFFECT OF THERAPIES ON IRRITABILITY, ANXIETY RELATED SYMPTOM COMPLEX (SANTAPA-KRODHA PRACHURATA-BUDDHIMOHA) :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	0.90	0.16	81.81	0.621	0.179	4.179	<0.01
Rakta Mokshana	1.0	0.28	71.42	0.755	0.285	2.5	<0.05
Virechana, Rakta Mokshana & Upavasa	1.36	0.8	86.66	8.73	0.263	4.485	<0.001

**TABLE NO. 7 : EFFECT OF THERAPIES ON FATIGUE RELATED SYMPTOM COMPLEX (GURUGATRATA, ATIDOURBALYA, KLAMA) :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	1.883	0.583	68.18	0.621	0.179	6.966	<0.001
Rakta Mokshana	1.714	0.714	66.66	0.377	0.142	8.0	<0.001
Virechana, Rakta Mokshana & Upavasa	2.09	0.636	68.56	0.934	0.281	5.163	<0.001

**TABLE NO. 8 : EFFECT OF THERAPIES ON ANOREXIA RELATED SYMPTOM COMPLEX (AGNISADA, ARUCHI, TIKTA AMLODGARA, ANNAPANAVIDAHA) :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	3.166	0.583	81.57	0.996	0.287	8.983	<0.001
Rakta Mokshana	2.57	0.857	55.55	0.786	0.297	4.80	<0.01
Virechana, Rakta Mokshana & Upavasa	2.18	0.363	83.3	0.981	0.295	6.142	<0.001

**TABLE NO. 9 : EFFECT OF THERAPIES ON RAKTASARATA :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	0.90	0.16	81.81	0.621	0.179	4.179	<0.001
Rakta Mokshana	1.0	0.28	71.42	0.755	0.285	2.5	<0.001
Virechana, Rakta Mokshana & Upavasa	1.36	0.8	86.66	8.73	0.263	4.485	<0.001

**TABLE NO. 10 : EFFECT OF THERAPIES ON AMA LAKSHANAS :**

Group	Mean score		% diff.	SD	SE	t	p
	BT	AT					
Virechana	2.09	0.27	86.95	0.778	0.224	7.416	<0.001
Rakta Mokshana	2.0	0.57	71.42	0.534	0.202	7.071	<0.001
Virechana, Rakta Mokshana & Upavasa	1.90	0.45	76.19	0.522	0.157	9.23	<0.001

TABLE NO. 11 : EFFECT OF THERAPIES ON DHATU DUSHTI LAKSHANAS :

	Mean score		% diff.	SD	SE	t	p
	AT	BT					
<b>VIRECHANA</b>							
Rasa	2.81	0.63	77.41	0.602	0.174	11.489	<0.001
Rakta	1.0	0.16	23.3	0.834	0.240	3.45	<0.01
Meda	0.27	0.09	66.66	0.389	0.112	1.483	>0.1
Asthi	0.36	0.09	70.0	0.452	0.130	1.914	>0.05
Majja	1.18	0.27	76.92	0.577	0.166	5.00	<0.001
<b>RAKTA MOKSHANA</b>							
Rasa	2.142	0.42	80.0	0.755	0.285	6.0	<0.001
Rakta	0.71	0.14	80.0	0.786	0.297	1.92	>0.1
Meda	0.85	0.28	66.66	0.534	0.202	2.828	<0.05
Asthi	0.42	0.14	66.66	0.487	0.184	1.549	>0.1
Majja	1.42	0.28	80.0	0.377	0.142	8.0	<0.001
<b>VIRECHANA, RAKTA MOKSHANA &amp; UPAVASA</b>							
Rasa	1.63	0.27	83.33	0.674	0.203	6.708	<0.001
Rakta	0.81	0.27	66.6	0.82	0.247	2.205	<0.05
Meda	0.54	0.27	50.0	0.46	0.40	1.936	<0.01
Asthi	0.45	0.09	80.0	0.50	0.152	2.390	<0.05
Majja	1.18	0.27	76.92	0.53	0.162	5.590	<0.001

**TOTAL EFFECT OF THERAPY :**

TABLE NO. 12 : OVERALL EFFECT ON BLOOD PRESSURE (ASSESSMENT BASED ON DIASTOLIC AND SYSTOLIC SCORE) :

Improvement	Virechana	Rakta Mokshana (R.M.)	Virechana, R.M. & Upavasa	Total	%
Excellent	01	02	01	04	13.3
Marked	05	04	06	15	50.0
Mild	04	01	04	09	30.6
No	02	00	00	02	06.6

TABLE NO. 13 : OVERALL EFFECT OF THERAPY :

Improvement	Virechana	Rakta Mokshana (R.M.)	Virechana, R.M. & Upavasa	Total	%
Excellent	08	04	09	21	70.0
Marked	03	03	02	08	26.6
Mild	00	00	00	00	00
No	01	00	00	01	31.3

**Effect of Therapies on Haematocrit & Biochemical Investigations :**

The ESR shows significant increase in the group treated with combined along with decrease of PCV. This may be indication of decreased Gurutva as the effect of Langhana. Effect of therapies on Biochemical Investigative parameters shows that decrease in blood sugar level owing to Apatarpana nature of therapy. The serum cholesterol showed

decrease in all the groups which was statistically insignificant.

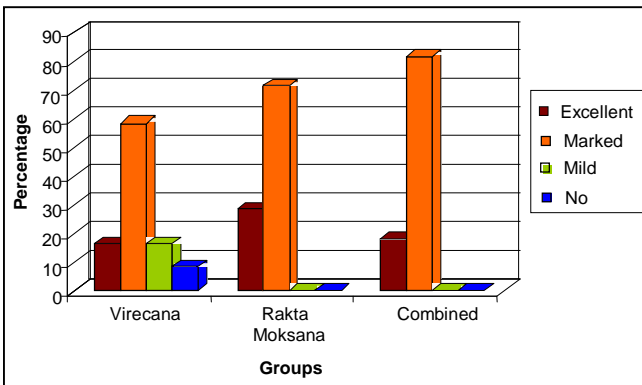
**Effect of Therapies on Dosha Vriddhi Lakshanas :**

The combined therapy was proved to be more effective in reducing the symptoms of Vata Vriddhi and Pitta Vriddhi (% diff. of 81.25 & 88.88 respectively and  $p < 0.001$  for both). But on the Kapha Vriddhi symptoms, the reduction was found maximum in Virechana group (% diff. of 77.27 and  $p < 0.001$ ).

## Overall Effect :

The overall effect of the therapies showed that Rakta Mokshana proves more valuable in showing excellent response and combined therapy in marked response. These both therapies did not show any mild or no response. But in Virechana group, mild and no responses were also obtained in few patients.

**GRAPH NO. 1 : OVEALL EFFECT OF THERAPIES :**



## DISCUSSION

*Effect of therapies on Systolic & Diastolic Blood Pressure :* Regarding the effect of therapy on Systolic B.P., Haritakyadi yoga showed significant result  $p < 0.05$ , the group treated with Raktamokshana also shows statistically significant result at  $p < 0.01$ , while for the group where combined therapy of Rakta Mokshana, Anulomana and Upavasa was administered shows highly significant result at  $p < 0.001$ .

The efficacy of Haritakyadi Yoga and Rakta Mokshana showed significant results on diastolic B.P. whereas the combined therapy shows highly significant result at  $p < 0.001$ .

This indicates that Raktamokshana may possess direct action on blood pressure by lowering the blood volume because the combined therapy also comprised of Raktamokshana. It removes the Shakhagata Dosh directly<sup>16</sup> so it may show the quick effect of lowering BP.

*Effect of therapies on Symptom Shirashshula :* On the symptom Shirashshula which was present in 100% patients, all the three groups showed highly significant result at  $p < 0.001$ , but percentage wise reduction was maximum in Rakta Mokshana Group. This may be because it possesses the direct BP lowering effect. Followed by that combined therapy proves it's utility. The Upavasa in combined therapy must be ailing this function by calming of mind with meditation. Moreover Raktamokshana and combined therapy (which includes Raktamokshana as well) are more effective indicates

the importance of Rakta as a pathogenic factor in the disease.

*Effect of therapies on Symptom Bhrama :* The Virechana group and combined therapy group shows highly significant results and the Rakta Mokshana group shows statistically significant result on the symptom Bhrama.

Maximum percentage wise relief was obtained in the combined therapy group since Bhrama is mainly due to vitiation of Rajas and Pitta. The combined therapy by means of Anulomana aids in Pitta Shamana and by Upavasa it decreases the increased Rajo Dosh. The other two therapies are also valuable because Virechana is the main Upakrama of Pitta and Raktamokshana also proved its significance, which may be due to Ekayonitva of Rakta and Pitta.

*Effect of therapies on Irritability Anxiety related symptom Complex (Santapa-Krodha Prachurata-Buddhimoha) :* Compared to Virechana and Rakta Mokshana, Combined therapy showed highly significant result at  $p < 0.001$  on the Santapa - Krodha Prachurata - Buddhimoha complex, where as the previous two groups showed significant results ( $p < 0.01$  and  $< 0.05$  respectively). This is because stability of mind achieved by Upavasa i.e. meditation and Krodhaparityaga has indeed super seated and catalysed the effect of other two Upakramas.

*Effect of therapies on Fatigue Related symptom complex (Gurugatrata, Atidourbalya, Klama) :* For the Fatigue Symptom complex highly significant results were obtained by all the three groups but percentage wise, maximum benefit was obtained in combined therapy group because in total action, this therapy is having the function similar to Langhana and so the disappearance of Tandra and Klama and achievement of Gatralthava, which are the signs of proper Langhana are obtained and hence proved more effective in reduction of Gurugatrata, Atidaurbalya and Klama.

*Effect of therapies on Anorexia Related Symptom Complex (Agnisada, Aruchi, Tikta Amlodgara, Annapanavidaha) :* Statistically highly significant results ( $p < 0.001$ ) was observed on anorexia related symptom complex in Virechana and Combined therapy, whereas the group managed with Rakta Mokshana showed statistically significant results at  $p < 0.01$ . This is because Upavasa stimulates Agni and the Virechana Yoga also possessing Dipana, Pachana properties.

*Effect of therapies on Raktasarata :* Effect of therapy on Rakta Sarata shows highly significant

improvement at  $p < 0.001$  in all the groups, with maximum % improvement in Rakta Mokshana group, followed by combined therapy group and than Virechana group. But along with this if Hb% is correlated, the results were contrary though not significant. Findings may lead to the conclusion that due to Raktamokshana, Hb% fall was observed but the effect on Raktadhatu as a whole was showing improvement in Sarata. So Hb% could not be considered as the only parameter for Sarata. The Sarata is resultant of many concomitant factors.

*Effect of therapies on Dosha Vriddhi Lakshanas :* The combined therapy was proved to be more effective in reducing the symptoms of Vata Vriddhi and Pitta Vriddhi (% diff. of 81.25 & 88.88 respectively and  $P < 0.001$  for both). This is because the synergetic effect caused by Anulomana which possesses mainly Pitta and Vatanulomana action along with Upavasa specially adopted for Satvavajaya had controlled the Krodha and Shoka which are also potent cause to increase Vata and Pitta. But on the Kapha Vriddhi symptoms, the reduction was found maximum in Virechana group (% diff. of 77.27 and  $p < 0.001$ ). It is indicative that Anulomana being a type of Virechana has acquired the proper yoga of 'Kaphanta Vireka' may be the cause of this effect.

*Effect of therapies on Dhatu Dushti Lakshanas:* All the Groups showed statistically highly significant results on Rasa and Majja Dhatu Dushti Lakshana, with maximum benefit on Rasa Dhatu through Virechana, Rakta Mokshana & Upavasa and maximum benefit on Majja Dhatu Dushti through Rakta Mokshana. Statistically significant benefit was obtained on Rakta Dhatu Dushti by Virechana therapy and significant results on Medo Dhatu Dushti was obtained through Rakta Mokshana and Combined (Virechana, Rakta Mokshana & Upavasa) therapies.

The combined therapy showed maximum improvement on Rasa Dushti Lakshanas proving that Upavasa indeed helps in curing the Rasa Pradoshaja Lakshanas<sup>17</sup>.

*Total effect of therapy :* The therapies in total proved maximum percentage of relief in symptoms (70%) and showed marked response in BP (50%). But this response is sufficient enough to prove importance of the therapies because it is stated that "Even a small reduction in the average blood pressure of a population would produce a large reduction in the incidence of cardiovascular complications such as stroke and CHD (WHO 1986 Techn. Rep. Sr. No. 732)".

The measures like Upavasa or Anulomana are easily admissible and could be advisable without many restrictions to large scale of population. The blood letting according to convenience can be conducted by means of Raktamokshana camps in Shishira Ritu. Thus the therapy will prove valuable in reducing the prevalence of HT.

## CONCLUSION

The disease Hypertension can be visualised through the Vidhishonitiya Adhyaya as a Raktashrita Vikara. Striking similarity between the Hetus and Lakshanas of Uchcha Raktachapa and Shonitashrita Vikara was revealed. The Nidanas observed were coinciding to that of the Hetuskandha of Raktaja Rogas quoted at Vidhishonitiya and these Rogas also exposed positive relation because out of 41 Rogas, 27 were found as symptom in the patients of Uchcharaktachapa. Uchcha Raktachapa is a combination of Udavarta and Ajirna. The Hypertension indeed is the disease originated due to Mandagni. The Udavarta is discussed under the Trimarmiya Chikitsa of Charaka Samhita<sup>18</sup> and this placement of Udavarta increases the possibility of correlating it with Uchcha Raktachapa because the Hridaya, Basti (Mutravaha Sroto Mula) and Shira are the organs showing involvement in Uchcharaktachapa. Secondly the Vegasandharana is the cause found in many patients of Hypertension, which is due to fast life.

The Dosha Dushya involvement in Uchcha Raktachapa reveals the Tridosha vitiation along with Rakta, Rasa, Meda and Majja. Uchcha Raktachapa is indeed psychosomatic disorder of Santarpanaja nature. On the parlance of Vidhishonitiya Adhyaya, Mada-Murcha-Sanyasa can be explained as the Upadravas or advanced stages of Uchcharaktachapa. The disease Uchcha Raktachapa selected as an applied aspect of Vidhishonitiya Adhyaya proves the practical approach of management by the Chikitsa Sutra of Raktashrita Vikara. The results of clinical study conducted based on the principle of management of Raktashrita Vikara were significant.

The combined therapy proved effective on both physical as well as psychological parameters as it was found to be effective in reducing systolic pressure, Bhrama, Anxiety related symptoms, Fatigue related and Anorexia related symptoms. Raktamokshana proved effective in reducing the diastolic blood pressure & Shirashula. Virechana group showed more effective results in reducing the Ama Lakshana and was also helpful in reducing blood pressure.

Though the study was carried out in small sample, but honest efforts to put forward the conclusions are taken. The observations of this small data will definitely invite some more works of this kind on large scale.

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## हिन्दी सारांश

### चरक संहिता के विधिशोणित्तीय अध्याय के परिपेक्ष्य में उच्चरक्तचाप का अध्ययन एवं चिकित्सकीय अवलोकन

मधुमती ढमाले, मीरा के. भोजाणी, संतोषकुमार भट्ट एवं आर.आर. द्विवेदी

उच्चरक्तचाप व्याधि आयुर्वेद संहिताओं में इस नाम से वर्णित न होते हुए भी, उसके हेतु स्कंध और लक्षण स्कंध के आधार पर उसका साम्य विधिशोणित्तीय अध्याय गत वर्णित रक्ताश्रित व्याधियों से पाया गया। उसी अध्याय में वर्णित औषध स्कंध (चिकित्सा सूत्र) का उच्चरक्तचाप के रोगियों में प्रयोग किया गया। ३० उच्चरक्तचाप के रोगियों को ३ वर्गों में विभाजित किया गया। (अ) ७ रोगियों को रक्तमोक्षण करवाया गया, (ब) १२ रोगियों को हरीतक्यादि योग से अनुलोमन करवाया गया और (क) ११ रोगियों को रक्तमोक्षण, अनुलोमन के साथ उपवास का सम्मिलित प्रयोग कराया गया। रक्तमोक्षण से २८.५% रोगियों को अत्यधिक लाभ मिला, रक्तमोक्षण-अनुलोमन एवं उपवास (सम्मिलित से) ८१.८१% रोगियों को मध्यम लाभ मिला तथा केवल अनुलोमन से अल्प लाभ मिला। इस अध्ययन से औषध स्कंध द्वारा भी उच्चरक्तचाप को रक्ताश्रित व्याधि के रूप में प्रस्थापित किया जा सकता है।

